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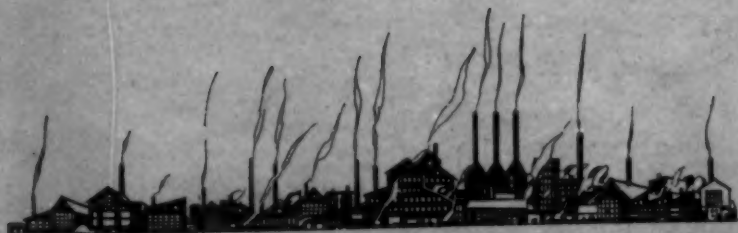


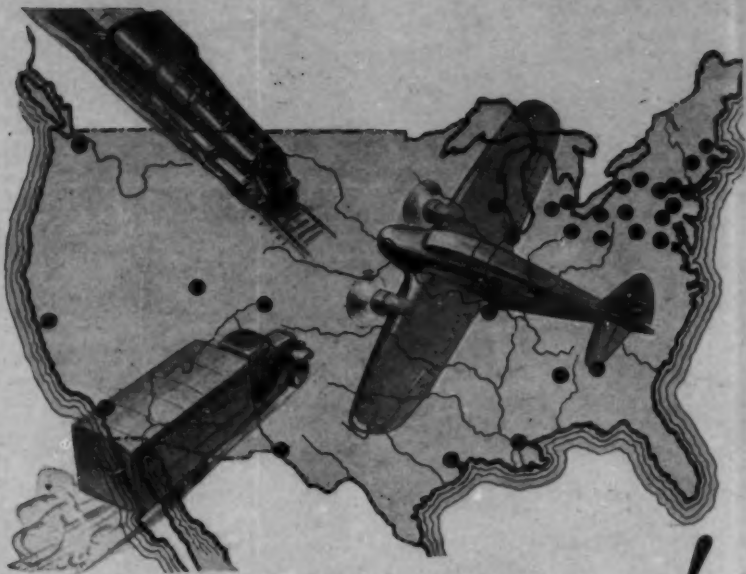
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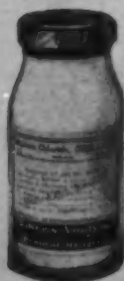
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# The CHEMIST

Publication of

THE AMERICAN INSTITUTE OF CHEMISTS, INC.

V. F. KIMBALL, *Editor*, 233 Broadway, New York City

VOLUME XIV

FEBRUARY, 1937

NUMBER 2

## TABLE OF CONTENTS

	Page
Objectives of The American Institute of Chemists .....	30
Editorial .....	31
Fellowships Available .....	33
The Philosophy of Research — <i>W. M. Malisoff</i> .....	36
Books .....	41
Annual Meeting .....	42
Council .....	43
Chapters .....	45
Our New Members .....	47
News .....	51
From Our Readers .....	55
Chemists Abroad, <i>J. N. Taylor, F.A.I.C.</i> .....	56
The Walrus and the Carpenter .....	59

THE AMERICAN INSTITUTE OF CHEMISTS

HOWARD S. NEIMAN, *Secretary*

233 Broadway

New York, N. Y.

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**Objectives**  
of the  
**AMERICAN INSTITUTE of CHEMISTS**

To give chemists professional solidarity.

To put the profession back of a definite code of ethics.

To insist on adequate training and experience qualifications.

To educate the public to an understanding of what a chemist is.

To protect the public and the profession by fighting quackery.

To raise the economic status of chemists.

---

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The American Institute of Chemists  
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## EDITORIAL

### Burden of Unemployment Heaviest Man Can Bear

By WESTBROOK PEGLER

**M**ONEY is only clam shells or metal discs or scraps of paper, and there are treasures of the heart and soul which money cannot buy, but most people, being broke, are unable to keep this in mind and sustain their spirits. When a man is down and out and on the street, unable to get any job at all, something happens to his spirit which can be observed in the droop of his shoulders, the set of his hat, his walk and his gaze. He cannot escape a feeling of inferiority among people with regular employment, even though he knows they are definitely not his equals in character, intelligence or ability.

These people—even his friends—feel, on the other hand, a sense of superiority and regard him, perhaps unconsciously, as a casualty. He may borrow for a time, but not enough to carry on in his accustomed way, and he cannot continue to borrow very long. But borrowing in itself, when a man is borrowing merely to live, is a depressing experience, and the money lacks the power of earned money to revive his spirits. Of course, none of this applies to bums or habitual ne'er-do-wells, but only to men of normal ambitions and self-respect.

#### Women Conceal Despair

Women in the same predicament must be different. We somehow do not think of women at all in considering the down-and-outers. They are scarce in the breadlines, they are rarely seen begging on the streets, and they are not recognizable in crowds by the same plain signs which identify busted men. Of course, I do not mean the shuffling hags of the city streets who are the opposite number of the confirmed male bums. I mean reasonably young, decent and intelligent women. There must be many of them, but their despair is not apparent. Maybe they kill themselves.

When a man is down and out he has time on his hands for brooding. He may travel miles to see a man about a job and discover that the job is filled or that it is one of those jobs with no base pay but only a commission on the sale of some useless knickknack which nobody would buy, except out of pity. Turning that down, he finds himself back on the street with nowhere to go but just anywhere. So he walks and

walks. He gazes into store windows at luxuries which are not for him, and feels inferior and gives way to people who stop to look with an active interest. He wanders into the railroad station or puts himself down in the library to ease his legs and soak up a little heat, but that isn't looking for a job, so he gets going again. He may not know it, but his aimlessness would give him away even if the very lines of his figure did not. He may be well dressed in the clothes left over from the days when he had a steady job, but the clothes cannot disguise the droop.

### Money Makes Difference

He sees thousands of other people, bookkeepers or clerks or chemists or wagon hands, busy at their work and envies them from the bottom of his soul. They have their independence, their self-respect and manhood, and he simply cannot convince himself that he is a good man, too, though he argue it out and arrive at a favorable verdict hour after hour.

It is just money which makes this difference in him. With a little money he would be himself again.

Some employers take the most shocking advantage of people who are down and out. The agencies hang out little colored cards offering miserable wages to busted men—\$12 a week, \$15 a week. An \$18 a week job is a plum, and anyone with \$25 a week to offer does not hang the job out in front of an agency on a colored card. I have a want ad clipped from a local paper demanding a clerk, a good, clean penman, to take telephone orders for a sandwich shop from 11 A. M. to 2 P. M. for \$8 a month—not \$8 a week but \$8 a month. The ad says also, "State religion". Can you imagine the brutal effrontery of anyone who demands a good, clean penman for 11 cents an hour inquiring into the victim's religion? But that is what busted people are offered.

It said in the papers when Edward VIII abdicated that he left England broke, without a shilling in his pocket. Broke he was on a dole of at least \$100,000 a year, or \$2,000 a week, and buying jewels and furs for his crush. He will never know what it is to walk the street trying to pretend that he is going somewhere, and just walk and walk.

—Reprinted with permission from the New York World-Telegram.

### Editor's Comment:

The above column from the New York World-Telegram graphically portrays the great need for the Chemists' Unemployment Committee in New York and for similar institutions in other cities. This Committee

provides reading and lounging facilities for the unemployed chemist, and also provides a staff of men, who are experienced in giving new hope and confidence to discouraged souls, and who are able to make each unemployed feel that he is a person of importance; that he will be given temporary work, if necessary, until he can be placed in a position; that information will be secured for him and contacts made with industries best able to make use of his abilities. Thus the unemployed chemist knows that he has friends who will devote themselves to his personal problems, and he can once more walk with confidence and a purpose.



## Fellowships Available

### DuPont Fellowships

E. I. du Pont de Nemours and Company announce that six post-doctorate fellowships and eighteen post-graduate fellowships will be awarded for the academic year 1937-1938. These fellowships, located at eighteen leading universities and colleges, are maintained to encourage more promising students in research work in the field of chemistry.

The purpose of these fellowships is to promote the advancement of science and the scientific training of young men, and to coöperate with the educational institutions in their efforts to carry on advanced research work. These fellowships are not restricted to research on subjects directly connected with the du Pont products, but the colleges are permitted to select the beneficiary of the fellowships and the research subjects as well.

An appropriation of \$26,500 has been made for these fellowships for the year 1937-1938, to be allocated as follows: \$13,000 for six post-doctorate fellowships at \$2,000 each, with \$1,000 to cover the cost of equipment needed in the work of this group, and \$13,500 for eighteen post-graduate fellowships at \$750 each.

The institutions selected are: University of Chicago, Columbia University, Cornell University, Harvard University, University of Illinois, Johns Hopkins University, Massachusetts Institute of Technology, University of Michigan, University of Minnesota, University of North Carolina, Ohio State University, Pennsylvania State College, University of Pennsylvania, Princeton University, Stanford University, University of Virginia, University of Wisconsin, and Yale University.



### Science Fellowships for Study in France

The *Fondation Scientifique de Lyon du Sud-est* offers a fellowship of 10,000 francs for nine months at the University of Lyon to a graduate student of chemistry, preferably industrial chemistry. The student should have a knowledge of French sufficient to enable him to pursue his work with profit.

The *Office National des Universités et Écoles Françaises* is offering a fellowship of 18,000 francs for nine months of study at any French university, free transportation to and from France (tourist class, French Line), and railroad fare from Le Havre to Paris and return, to advanced students who have specialized in science, preferably men who have already obtained doctorates in mathematics, physical science, chemistry or biology.

Requirements for eligibility for both fellowships are that the candidate must be American born; a graduate of a college or university of recognized standing; be of good moral character and intellectual ability and of suitable personal qualities; present a certificate of good health; possess ability to do independent study and research; have a knowledge of French sufficient to enable him to read, speak, and understand the language. Preference will be given applicants between the ages of twenty-five and thirty-five.

For application forms address the Student Bureau, Institute of International Education, 2 West 45th Street, New York City, sending ten cents to cover the cost. The closing date for filing applications with complete credentials is March 1, 1937.

### Fellowships for Study in the Scandinavian Countries

The American-Scandinavian Foundation announces that a number of travelling Fellowships for study in the Scandinavian countries during 1937-1938 will be awarded. These Fellowships carry stipends of \$1,000 each.

Graduate students, younger instructors, and professors in American Colleges are especially invited to become candidates, although graduates of the current year are also eligible.

For study in Sweden the following fellowships are available: Chemistry, Physics, Mathematics, Agricultural Sciences, Administrative or Social Sciences, Forestry, Mining and Metallurgy, Electrical Engineering, Language and Literature, other Humanistic, Technical and Scientific subjects.



For study in Denmark: Industrial Organization, Coöperative Agriculture, Agricultural Sciences, Bacteriology, Physiology, Chemistry, Physics, Mathematics, Folk High Schools, Language and Literature, other Humanistic, Technical and Scientific subjects.

For study in Norway: Oceanography, Hydro-electricity, Forestry, Agricultural Sciences, Chemistry, Physics, Mathematics, Language and Literature, Weather Forecasting at Bergen Geo-physical Institute, other Humanistic, Technical, and Scientific subjects.

Qualifications: Candidates must have been born in the United States or its possessions. They must be capable of original research and independent study and each must submit a definite plan of study. They should be college graduates and familiar with at least one language in addition to English—preferably Swedish, Danish or Norwegian. Application papers, including letters of recommendation and a photograph, must be filed at the office of The Foundation before March 15th, or before March first, at his college, if the candidate wishes the official endorsement of his college. Application papers may be obtained from Neilson Abeel, Secretary, The American-Scandinavian Foundation, 116 East 64th Street, New York, N. Y.



### **Johns Hopkins Engineering School to Celebrate Twenty-fifth Anniversary**

Prominent engineers from other colleges and from the industrial field will participate in the twenty-fifth anniversary celebration of the Johns Hopkins School of Engineering to be held February 19th to 22nd. An address by Dr. Karl T. Compton, president of the Massachusetts Institute of Technology, to be delivered at the sixty-first Commemoration Day exercises of the University on February 22nd, will be the high-light of a program planned to include special technical sessions and an extensive exhibition of industrial and research projects.

Papers by the principal members of the faculty are to be read at the morning conference sessions on February 20th. Dean J. B. Whitehead, first professor of electrical engineering, upon the opening of the School in 1912, has arranged to invite officials of the State and City, leading industrial engineers and many research specialists from other colleges to take part in the technical discussions.—*Combustion*.

## The Philosophy of Research

By DR. W. M. MALISOFF

A Talk Given Before the New York Chapter  
of the American Institute of Chemists

DR. GERALD WENDT said, "Don't speak above their heads." I do not think it will do harm to speak above any one's head. I want to produce a stimulation which is possible only at the price of some confusion. My remarks are intended to get you interested in thinking about the subject rather than to instruct you. It would be folly to attempt to give you a course in the "Philosophy of Research" in thirty minutes. My function will be that of the proverbial gadfly—a buzzing function. If simple words fail me, there are many technical candidates eager to take their place. I am not going to lecture you on how to become a detective in ten easy lessons!

First, you must permit me a little diversion on definitions. We must find a definition for the expression, "Philosophy of Research." In my own experience I have come across at least two hundred clever, fluid definitions of philosophy and at least ten substantial, solid definitions of science. The proper combinations of these would make two thousand possible definitions of the philosophy of science. (Dr. Malisoff here mentioned a few of the more pungent definitions.) To turn rather abruptly to my own definition of philosophy, I will admit that it is quite as mystical and forbidding as any. *Philosophy is the analysis of possibility.* I could tell you a grueling tale of the trouble and pains taken to produce this simple definition. Every system of thought must have a key word. The misfortune of every system of thought is that the key word itself must remain indefinable. Possibility is indefinable. I cannot define it. I must not try to define it if I want to avoid reasoning in a circle. I could only talk about it in a general descriptive way, for which you can use the technical term "elucidation" rather than "definition". I say that possibility is that which neither is nor is not. It is something which only may be. If you wish, you can even say that it is something which both is and is not. Something which has that character is called technically "modal". From this you can see that my logic is far from being of the ordinary sort which says things must either be or not be. My logic

is "modal". I have made this choice in the conviction that the logic of science is also "modal", that the reasoning of science is saturated with a tincture of possibility.

My companion definition for science is that it is *the investigation of the actual*. Research is the sum total of all the methods used in such investigation. I should have said it is *the sum total of all possible methods*. This idea is brought out more clearly in my definition of the philosophy of research. The philosophy of research or science, then, is the analysis of the possibility of the activities of scientists or the analysis of the possibility of performing researches of the actual.

The scientific genius is the one who can uncover the silver stream of actuality in the maddening jungle of possibility. Our existence as scientists can be compared to an alternation between drab wanderings among actualities or facts in our city laboratories and excursions into the country. From the exhilaration of a day with the sunshine and the clouds, we scurry to the train which takes us back to facts and practice. Not only the genius, but even the grayest of workers, is constantly commuting between analysis and experiments or application. I present this alternation to you as a kind of secret to happiness. The most human beings can expect is the alternation between brisk "action" and peaceful "activity". On the research plane, we can say that the scientist is enmeshed in the peaceful "activity" of philosophical (analytical) thought and the exciting life of "action" as an experimentalist.

Now that we know what philosophy of science is or may be, I propose to dwell a moment on what this philosophy of science may do and why it should do it.

Presumably there is some method in its madness and some goal in its striving. For this purpose, I have formulated two texts. Like all texts they are a little silly, that is, exaggerated and inaccurate. They are deliberately made so in order to attract attention.

### ***Everything is Possible***

Our first text, then, is: "Everything is possible". (That is obviously untrue, but it should be remembered, what I said about "modal" logic.) Our second text is: "What is good is true." (Someone, I am afraid, will say that it is not only untrue but it is also not good.)

Having mentioned the unfortunate word "true" and perhaps the even more unfortunate word "good", I am forced to remark that any good philosophy of research must explain these two terms or be rejected as chimera. Many questions arise in this connection. The questions can be divided into two groups, namely, those that ask: What science is

all about? and those that ask: Why? or, why pursue science? Philosophy of science must answer questions such as: What is a scientific law? What does one assume in science? Does one really know anything without doubt? Are there really axioms in science? Is there only one way of reasoning in science? Is there such a thing as "the verdict of science"? These are "what" questions, and then there are the "why" questions or the "humanistic" ones as: Is science devoted exclusively to the machine and to the machine gun? Does science oppose religion? Is science indifferent to the good? Why should we have research on the dole? These are "humanistic" questions concerning sciences.

Observe, please, that my two texts run more or less parallel to these two sets of questions. My answer really amounts, as you see, to saying that science tries to give us the true and that the true will make us good.

The terms "truth" and "goodness", which I have called endless, can be designated in a philosophical expression, which I shall give you in German, namely, "Grenzbegriffe", loosely translated as "limiting conceptions". Truth is the name of an ideal, an ideal of science. Like any other ideal, it is not found ready-made. TRUTH (with capitals throughout) is only a name for a goal, which for all we know and all we care is infinitely distant. Perhaps it should be kept away as far as possible—a lighthouse would do very well as a simile. A struggling ship, buffeting stormy waves, is directed to its goal by a lighthouse, which had better be beyond the goal to avoid danger of collision. I am also reminded of an old Talmudic story based on the text that, "The minute you see the truth you must die". Well, the general goal called truth is so faint that there is little danger of the most successful researcher dying from its dazzling brilliance. Those of you who are mathematically minded will appreciate the statement that the distance of an ideal should be of the general character of an infinite goal, capable of permitting infinite diversion — something like the series  $\frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \frac{1}{10} + \frac{1}{32} + \dots$ , which we all know adds to one but which has an infinite number of steps for its progression. The sums of such a series is what I have called "Grenzbegriffe". Truth is a limiting concept of that general character.

Is it not easier now to understand my first text, that everything is possible? I have risked such an extreme statement because I think that the progress of science towards truth partakes of the character of infinity. A little more technical way of saying this is, I think, that the context of nature is endless. A context is a situation. What I mean

to say is that if the situation is large enough, and is comprehensive enough, almost anything may be possible within it. I can bring conviction to your minds by citing something from mathematics. For example, in plane geometry it is impossible to square a circle or to trisect an angle. However, a Russian engineer has discovered a method of squaring a circle and several people have made instruments which will trisect an angle. What has happened? The context of plane geometry specifies the use of ruler and compasses. The Russian engineer and the other inventors have changed the context to other instruments. The circle can be squared in a more comprehensive manner than in plane geometry. The impossible has become possible.

Now, the most general context in experimental science is what I call Nature. The context of Nature, I repeat, is practically endless. As research progresses, we increase that context somewhat in the fashion of that infinite series I spoke about,  $\frac{1}{2} + \frac{1}{4} + \frac{1}{8}$ , etc. What, then, is the logic of Nature? Is it the logic of that part of nature which says you cannot square a circle or that part that says you can?

So, after all, even without exaggeration, it is better to say everything is possible, than to say that anything is impossible. I think it is often quite dishonest to use the word "impossible" when we do not know the context. How can anyone say it is impossible or will be impossible to cure cancer when we do not know the context of cancer, not to speak of the context of nature itself? The door must be kept open. We must hold to an ideal of science which allows for an infinite progress.

To frighten you still more, may I tell you of how Plato has treated this matter of infinite possibility? You remember that the actual things of the world to him were shadows of eternal ideas. An actual object like a piece of paper, or an actual being, like the speaker, fortunately or unfortunately has only a limited existence. It perishes, but not the thought of it! The thought of it whether present in anyone's mind or not sits Buddha-like through eternity. There are many ideas which we reach through concrete experience, but they seem to live an existence of their own. The technical name for that is "universals". We see a red book, a red rose, a red flag. From all of this we derive a notion of "redness". A little reflection reveals that the redness is something which seems to reside in these things only as a mere occasion to reveal itself and that it need not be observed by us for its own existence. Now that we know what it is, redness is redness through all eternity. No matter how many objects it may be incarnated in, it is universal and eternal. Professor Whitehead has called such words "eternal objects".

My plan to frighten you with my "possibilities", the "possibilities" of science, is to point out that they are the heirs of these universals stripped of a good deal of their mystery. It takes a great deal of courage to face a possibility. It is a terrible thought to think that the idea of murdering your mother, for example, is an eternal thing. It is a possibility on a democratic level with any other possibility. The analysis of possibility requires a most devastating courage.

### *What is Good is True*

Now what about the good? Must science obey the ten commandments? What constitutes the purpose of science? Has science a purpose? Must scientific works be burned at the stake? What is scientific progress? Is there a good theory of progress to serve as an answer? What is civilization? What is creativeness? What do we mean by an "age of science"? (This is not an "age of science" but an age that has been influenced by science.) Will the truth lead us to the good, as my second text proposes?

Scientists have been and are too busy to consider those things. It is a demand of decency that scientists, who have so influenced the world, should at least make an effort to create a *scientific ethics*, or a scientific answer to the question of what is good. Some of you are no doubt accustomed to relegating the ethical question to religion. In your mind my demand would be translated into a demand for a science of religion, rather than a science of ethics. The philosopher, Immanuel Kant, attempted to restrict science only to the question "how", and to give religion the full scope of answering the question, "why". You must remember that it was not safe to speak against religion while occupying a chair in a university at that time. I believe he indulged in an elaborate throwing of sand in the eyes of the authorities. He talked of ethics and called it religion. There is no sharp distinction in the "how" and in the "why" in actual life. I cannot conceive any human being doing things without an idea of why. Practice and theory are never separated. There is no pure theory and no pure practice. You, chemists, might be tempted to write a reversible reaction with theory on one side and the symbols of practice on the other. As I see the situation, we find facts with a purpose and purposes with facts. Besides, an ethical situation is never quite clear no more than the truth is clear. There we also have an infinite progression of the kind I spoke of, and it is only through increased knowledge that we can comprehend an increased good. To put it for you in a more compact phrase, I

would say that an ethical ideal is made up by a summation of an endless series of simple practical objectives.

I have practically no time to develop this idea further, but I believe you can already see some sense to the hope that the two infinite series of the *true* and the *good* may converge to the same limit.

The philosophy of research, which sponsors the search for the true in the hope of finding the good, has, I believe, a startling reward in store for it. With every discovery of what is true and what is good, there also emerges the discovery of the beautiful.

(Following this talk, questions of the greatest variety were asked and answered.)

### *A Dream of the Future*

Dr. Malisoff concluded the discussion with a "dream of the future before it has been dreamt." We will have gradually worked forward to a society of research workers. Every human being would be a scientist of a kind and would be imbued with a scientific idea of research. A set of ideals would be developed which could be called a possible science of ethics. Religion would consist mainly of a sweet personal mysticism. Human beings would oscillate between scientific and ethical activity and aesthetic and mystical (religious) release. Religion would thus be strictly private. Science is *social* and does not contradict the private. Oscillation between the social and the private offers endless possibilities of developing the entire being.

## BOOKS

FUNDAMENTALS OF QUALITATIVE CHEMICAL ANALYSIS. *McAlpine and Soule.*

A year or so ago, we welcomed a revision of Prescott and Johnson's *Qualitative Analysis* by the present writers.

The book at hand carries out the general educational principles of the larger volume, but is addressed both as regards teachers and students to a more elementary group. We believe that almost a maximum of assistance has been given in this volume to both teachers and students.

The theory of qualitative analysis, as a branch of general inorganic chemistry, has been introduced in the first few chapters of the book separately from the systematic treatment of qualitative analysis which



occupies the balance of the volume. However, there is constant cross-reference, so that by using the latter chapters of the book as a laboratory guide, the student is continually refreshed in theoretical principles.

We believe that this text should prove very useful in technical high schools, as well as in elementary college courses. Price \$2.40. Copies may be obtained from THE CHEMIST.—Karl M. Herstein, F.A.I.C.

#### HANDBOOK OF CHEMISTRY AND PHYSICS. 21st Edition.

The first thing which strikes the reviewer in looking over this handbook and comparing it with one of its older predecessors is wonder at its growth. One wonders whether in the course of a few more editions, it may not increase from its present 2,000 pages to double that number. The point has already been passed when it can be considered a handy, quick reference. It would seem thoroughly advisable to break up the present volume into two parts with such selection of contents for each part as would make for easier use.

We note also, that the table of organic compounds still remains in its somewhat inconvenient paragraph form, as against the tabular form which it had until the twentieth edition.

We note that the collection of laboratory arts and recipes has been revised and improved by the addition of considerable useful material; the photographic section has been augmented, and there has been added a collection of data on commercial plastics which contains much useful material.

The book remains an indispensable part of the library of every scientific worker. Price \$6.00. Copies may be obtained from THE CHEMIST.—Karl M. Herstein, F.A.I.C.



#### Annual Meeting of the American Institute of Chemists—1937

The 1937 Annual Meeting will be held in New York, N. Y., in May. Programs, headquarters, and the exact date will be announced later.



#### Position Wanted:

1-1-37. Chemist and Bacteriologist. Age 35. Distillery, food, pharmaceutical, paper, research development, control, management, operation and construction of plants.



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### December Meeting

The one-hundred and thirty-seventh meeting of the National Council of THE AMERICAN INSTITUTE OF CHEMISTS was held at The Chemists' Club, 52 East 41st Street, New York, N. Y., on December 17, 1936, at 5:30 o'clock P. M.

President Maximilian Toch presided. The following officers and councilors were present:

Messrs. R. A. Baker, F. G. Breyer, B. H. Knight, R. J. Moore, H. S. Neiman, W. T. Read, C. W. Rivise, N. A. Shepard, M. Toch, L. Van Doren, and F. W. Zons.

Dr. Joseph W. E. Harrison, of the Pennsylvania Chapter, and Dr. F. W. Zerban were present. Miss V. F. Kimball was also present.

The minutes of the previous meeting were approved.

The Secretary read a report of the

Committee appointed to consider the reclassification of the Municipal Chemists of the City of New York.

Upon motion made and seconded, the Secretary was requested to send copies of this report and the original correspondence to the Councilors for their consideration.

The Secretary reported that, without counting the new members to be elected at this meeting, we now have 1079 members, of which 881 are Fellows.

The Secretary read a suggestion from Dr. Moore to the effect that the members canvass for new members in their particular industries. Upon motion made and seconded, the President was requested to appoint members to secure new membership in their particular industries.

The Treasurer's report was read and accepted.

The President and Treasurer presented plans for improving the financial condition of the INSTITUTE.

The following new members were elected:

FELLOWS

KENNETH F. ATWOOD, *Chemist*, The Gilbert Spruance Company, Philadelphia, Penna.

BERNARD H. BAILEY, *Assistant Superintendent*, Flooring Division, Bird and Son, Inc., East Walpole, Mass.

ROBERT S. BARNETT, *Research Chemist*, The Texas Company, Beacon, N. Y.

PAUL H. M. P. BRINTON, *Consulting and Research Chemist*, 1064 Linda Vista Way, Pasadena, Calif.

FRANK L. CHINERY, *Research Chemist*, The Eagle Picher Lead Company, Cincinnati, Ohio.

EMIL C. FANTO, *Chief Chemist*, McKesson and Robbins, Inc., Bridgeport, Conn.

THOMAS C. FORD, *Vice-president and Technical Adviser*, American Asphalt Paint Company, Kankakee, Ill.

WALTER H. LINDENTHAL, *Chemist*, Bakelite Corporation, Bloomfield, N. J.

KENNETH V. McCULLOUGH, *Chemist*, Bakelite Corporation, Bloomfield, N. J.

GEORGE B. MURPHY, *Manager*, Research and Development Laboratories, Universal Oil Products Company, Riverside, Ill.

LAWRENCE A. O'LEARY, *Research Chemist*, W. P. Fuller and Company, San Francisco, Calif.

JOHN M. PURDY, *Chief Chemist*, The Lowe Brothers Company, Dayton, Ohio.

LANNING P. RANKIN, *Research Chemist*, Bakelite Corporation, Bloomfield, N. J.

ROBERT E. RAUH, *President and Treasurer*, Robert Rauh, Inc., Newark, N. J.

JOHN MCE. SANDERSON, *Sales Engineer*, American Cyanamid and Chemical Company, New York, N. Y.

GEORGE B. SAWYER, *Technical Director*, Ferbert Schorndorfer Company, Cleveland, Ohio.

ASSOCIATE

LEWIS APPLETON, *Chemist*, Polar Manufacturing Company, New York, N. Y.

JUNIORS

DARRELL E. MACK, *Research Chemist*, Niacet Chemicals Corporation, Niagara Falls, N. Y.

EDWARD G. EGAN, *Purchaser of Chemicals*, Franco-American Chemical Works, 342 Madison Avenue, New York, N. Y.

There being no further business, adjournment was taken.

Special Meeting

A special meeting of the National Council of THE AMERICAN INSTITUTE OF CHEMISTS was held at The Chemists' Club, 52 East 41st Street, New York, N. Y., on January 7, 1937, at 5:30 o'clock P. M.

President Maximilian Toch presided. The following officers and councilors were present:

Messrs: R. A. Baker, F. G. Breyer, B. H. Knight, R. J. Moore, H. S. Neiman, W. T. Read, N. A. Shepard, and M. Toch.

Miss V. F. Kimball was also present.

The President read the report submitted to him by the Certified Public Accountant who recently audited the INSTITUTE's books, and asked that this report be presented again at the next regular meeting of the Council.

Upon motion made and seconded, it was agreed to call the next regular meeting for January 28, 1937.

Upon motion made and seconded, it

was agreed to engage Mr. Jacob A. Lichtenfeld as an accountant to audit the books of the INSTITUTE and make reports.

Upon motion made and seconded, it was agreed to pay Mr. Lichtenfeld \$25.00 quarterly for his services.

Dr. Toch reported that financial arrangements had been made to place the treasury of the INSTITUTE on a sound financial basis.

The matter of appointing an executive committee to consider minor matters, thus leaving only major matters to the consideration of the Council, was discussed, and it was finally decided that the Constitution does not make provision for such a committee.

Upon motion made and seconded, it was decided that the National Council would meet (after the month of January) at noon on the first Wednesday of each month and in the evening on the third Thursday of each month.

The matter of raising the dues was referred to the Annual Meeting, and the Secretary was requested to include this matter in the call for the Annual Meeting.

Consideration of a place for the Annual Meeting was referred to the next meeting of the Council.

Consideration of a possible change in the name of the INSTITUTE was referred to the Annual Meeting.

There being no further business, adjournment was taken.

## CHAPTERS

### New York

*Chairman*, Raymond E. Kirk

*Vice-chairman*, D. D. Berolzheimer

*Secretary-treasurer*, James W. H. Randall

52 East 41st Street

New York, N. Y.

*Council Representative*, Lloyd Van Doren

### Niagara

*Chairman*, Groves H. Cartledge

*Vice-chairman*, Howard W. Post

*Secretary-treasurer*, William R. Sheridan

1439 Kenmore Avenue

Kenmore, New York

*News Reporter to THE CHEMIST*, William A. Smith

*Council Representative*, Arthur W. Burwell

### Washington

*Honorary President*, Charles E. Munroe

*President*, Louis N. Markwood

*Vice-President*, Norris W. Matthews

*Treasurer*, James B. Martin

*Secretary*, Ralph B. Deemer

213 Maple Avenue, Takoma Park, Maryland.

*News Reporter to THE CHEMIST*, James F. Couch

*Council Representative*, Louis N. Markwood

## Pennsylvania

Chairman, Joseph W. E. Harrison

Vice-chairman, Lewis D. Newitt

Secretary-treasurer, Avenir Proskouriakoff

67 Fairview Avenue

Lansdowne, Penna.

Council Representative, Charles W. Rivise

The first meeting of the season 1936-1937 of the Pennsylvania Chapter of THE AMERICAN INSTITUTE OF CHEMISTS was held on Tuesday, October twentieth, at the Engineers' Club. The members of the INSTITUTE were invited by the officers of the Chapter to be present at the dinner as their guests.

The dinner was served in the Board of Directors room to the fifteen members attending. Following the dinner, there was a discussion of the type of programs and meetings for the coming year. Every member expressed his particular preferences and ideas on the subject. It appeared that the majority of the members present would like to hear lectures and talks on technical subjects, giving a specialized chemist the opportunity to take a look into other less familiar branches of chemistry and to see "what the other chemists do". The desire was expressed for organizing trips and visits to scientific and industrial institutions, museums, and laboratories, where talks, demonstrations, and explanations would be given by experts. Several such places of interest were suggested, and consents were obtained from those having connections or access to them to make necessary arrangements.

The dinner was arranged and financed by the Chairman of the Chapter, Dr. Joseph W. E. Harrison, who presided.

## December Meeting

On Saturday, December 12th, 1936, the members of the Pennsylvania Chapter of THE AMERICAN INSTITUTE OF CHEMISTS were invited to visit The Industrial By-Products and Research Corporation Laboratory in the Gimbel Store, where they had a chance to get acquainted with the application of laboratory methods to the control of products sold and distributed through retail channels.

The tensile strengths of different textile materials and their resistance to wear and friction were demonstrated by laboratory tests, which were devised to duplicate as closely as possible the actual conditions of use of these materials. Photographic and chemical methods of identification of different fibers, including artificial silks and wool, tests for resistance of dyes to light and washing, apparatus for comparing the qualities of silk stockings and of waterproof and water-resistant materials, and numerous other methods and devices for testing textile materials, some of which were invented, modified or improved by the members of the laboratory staff, were ably demonstrated and explained by Herbert S. Schenker, S. Weinberg, and Louis S. Potsdamer.

Considerable interest was shown by the Chapter in the activities of this little "Bureau of Standards"; intended to protect both the buyers and

the manufacturers of the merchandise.

The following members visited the Laboratory:

Messrs. Stuart Kabnik, Arthur De Marco, C. W. Rivise, Joseph E.

Chapin, John H. Beltz, Joseph W. E. Harrison, W. S. Berry, A. Proskouriakoff, Franklin D. Jones, Maurice L. Moore, A. C. Angus, L. D. Newitt.



## OUR NEW MEMBERS

PAUL ALLEN, JR., F.A.I.C., received the Ph.D. degree from Harvard University. He specializes in general and physical chemistry, inorganic, analytical, and organic chemistry, petroleum, and the teaching of chemistry. He has a patent pending on polysulfides. His position is associate professor of chemistry at St. John's College, Annapolis, Maryland.



HARRY L. ANDREWS, JR., J.A.I.C., was graduated from Lehigh University. He is research chemist with Congoleum-Nairn, Inc., Marcus Hook, Pennsylvania.



HARRY E. BARNARD, F.A.I.C., holds the D.Sc. degree from the University of New Hampshire and the Ph.D. degree from Hanover College. Particularly interested in biological chemistry; general industrial chemistry; soils, fertilizers; foods; the fermentation industries; water, sewage and sanitation; cellulose and paper; explosives; fats and fatty oils; paints, varnishes and resins; and sugar, starch and gums, he is the author of many reports, addresses, and papers on a wide range of subjects. For thirty-five years a consulting chemist, he has been the director of research for the Farm Chemurgic Council since its organization in May, 1935. His address is Dearborn Inn, Dearborn, Mich.

R. C. BENNER, F.A.I.C., studied at the University of Minnesota and the University of Wisconsin, receiving the Ph.D. degree from the latter institution. He specializes in electrochemistry; metallurgy; primary and secondary cells; corrosion; catalysis; chromium; active lead; lead peroxide; ceramics; abrasives; refractories; and sulfur recovery. He is director of research of The Carborundum Company, Niagara Falls, N. Y.



CHARLES A. COOK, F.A.I.C., obtained the B.S. degree from the University of New Hampshire and the Ph.D. degree from Yale University. Specializing in nitrogenous hormones and vitamins; galenicals, biologicals of nutrition, and biological process research, he is the author of several technical papers. His position is biological chemist at Burroughs Wellcome and Company, Tuckahoe, New York.



ROBERT P. COURTNEY, F.A.I.C., was graduated from Purdue University with the B.S. and Ch.E. degrees. He specializes in formaldehyde manufacturing; phenol-formaldehyde resins, protective coatings, abrasive products, and emulsions. His position is development engineer at the Bakelite Corporation, Bloomfield, N. J.

CLYDE A. CROWLEY, F.A.I.C., received the B.S. degree from Chicago Technical College and the M.S. degree from Loyola University. Specializing in photo sensitization, lubrication, and interfacial phenomena, he is the author of numerous papers and articles and holds a large number of patents in the photo sensitizer and plastic fields. He is director of research and treasurer of the Technical Service Bureau, Inc., Chicago, Illinois.



PETER A. DeCARLO, J.A.I.C., studied at LaSalle Military Academy, Alfred University (B.S. degree), and the University of Alabama. He is teacher of chemistry and biology at Public School 39, New York, N. Y.



ISAAC DROGIN, F.A.I.C., obtained the A.B. degree from the College of the City of New York and the Ph.D. degree from the University of Pittsburgh. Particularly interested in halogens in organic compounds; inversion of cane sugar; distillation; gasoline; natural gas; carbon black; and rubber technology, he is research chemist with J. M. Huber, Inc., New York, N. Y.



WILLIAM C. EICHELBERGER, F.A.I.C., studied at Oberlin College and at Johns Hopkins University, from which he received the Ph.D. degree. He is the author or co-author of several technical papers, among them, "The Osmotic Pressure of Dilute Benzene Solutions by the Porous Disk Method," and the "Preparation and Properties of Anhydrous Acetic Acid," etc. He is research chemist with The Solvay Process Company, Syracuse, N. Y.

EDWARD ELLERY, F.A.I.C., holds the Sc.D. degree from Colgate University, the Ph.D. degree from the University of Heidelberg, and the Sc.D. degree from the University of Pittsburgh. He specializes in inorganic chemistry, organic derivatives, sulfuric acid, silicon compounds, mineral waters, and sanitation. He is professor of chemistry at Union College, Schenectady, New York.



M. R. EVERETT, F.A.I.C., studied first at Bucknell University and later obtained the Ph.D. degree from Harvard University. He is particularly interested in analytical chemistry, biological chemistry, foods, the fermentation industries, sugar, starch and gums, and the teaching of chemistry. He is the author of "The Handbook of Biochemistry", and more than sixty scientific articles on carbohydrate metabolism, phenols, analytical phases of sugar chemistry, etc. He is professor of biochemistry and head of the Department of Biochemistry of the University of Oklahoma, Oklahoma City, Okla.



B. B. FRIED, F.A.I.C., has the Ph.D. degree from the University of Chicago and the Ch.E. degree from Armour Institute of Technology. He specializes in organic and physical chemistry; and industrial organic chemistry. He holds the rank of Lieutenant Colonel in the Chemical Warfare Reserve, and is a consulting chemist and chemical engineer at 5858 Magnolia Avenue, Chicago, Illinois.



HENRY C. FULLER, F.A.I.C. was graduated from Worcester Polytechnic Institute. He specializes in pharma-



ceutical chemistry; food technology and analysis; drug plant introduction and propagation; and alkaloids. An analytical and consulting chemist, he has offices at 1835 Eye Street, N.W., Washington, D. C.



HENRY A. GARDNER, F.A.I.C., studied at Brown University, the University of Pennsylvania, and Lehigh University, receiving the D.Sc. degree from the latter institution. Specializing in paints, varnishes, lacquers, oils, colors, etc., he is the author of eight-hundred articles on paint technology, in addition to the book, "Physical and Chemical Examination of Paints, Varnishes, and Lacquers". He also holds eighty chemical patents. He is director of the Scientific Section Laboratories of the National Paint, Varnish, and Lacquer Association, Washington, D. C.



D. R. HALE, F.A.I.C., was graduated from Colorado College, and obtained the Ph.D. degree from Cornell University. He has also studied at the Université de Strasbourg. He is research chemist for R. C. A. Manufacturing Company, Radiotron Division, Harrison, New Jersey.



JAMES S. HENDERSON, J.A.I.C., received the B.S. degree from Polytechnic Institute of Brooklyn. He is analytical chemist with the Royal Baking Powder Company, Brooklyn, N. Y.



GEORGE F. HENRY, F.A.I.C., obtained the B.S. degree from Washington State College and the M.S. degree from Northwestern University. Specializ-

ing in general and physical chemistry; subatomic phenomena and radiochemistry; electrochemistry; inorganic, and analytical chemistry, and teaching, he is professor of chemistry at the College of Puget Sound, Tacoma, Washington.



HENRY HOWARD, F.A.I.C., studied at Massachusetts Institute of Technology. Specializing in sulfuric acid manufacture and heavy chemicals, he is consulting engineer, Paradise Road, Newport, Rhode Island.



ROBERT N. ISBELL, F.A.I.C., was educated at William Jewell College, Yale University, and the University of Wisconsin, from which he received the Ph.D. degree. Specializing in organic chemistry, general chemistry, and qualitative analysis, he is the author of a laboratory manual, and of a number of technical papers. He is associate professor of chemistry, Wake Forest College, Wake Forest, N. C.



WALTER L. JENNINGS, F.A.I.C., holds the Ph.D. degree from Harvard. He is author of several technical publications, and specializes in education. He is professor of organic chemistry and director of the Department of Chemistry and Chemical Engineering at Worcester Polytechnic Institute, Worcester, Mass.



C. MORRIS JOHNSON, F.A.I.C., was educated at the University of Pittsburgh from which he received the M.S. degree. Specializing in analytical chemistry, metallurgy, and clay products, he is the originator of the chromium-nickel-silicon stainless steels

known as "rezistals", author of many technical publications and holder of a number of patents covering steel alloys, etc. He is chief chemist in charge of manufacture of laboratory refractories at the Park Works of Crucible Steel Company, Pittsburgh, Penna.



ARTHUR LINZ, F.A.I.C., studied at Columbia University and at Zurich Polytechnical Institute Dyeing School. He holds numerous patents covering dyestuffs, lake colors, pigments, paints, varnishes, and allied products, and is chemical engineer with the Climax Molybdenum Company, New York, N. Y.



IRVIN R. MAC ELWEE, F.A.I.C., received the B.S. and Ch.E. degrees from the University of Delaware. His position is works chemist with Congoleum-Nairn, Inc., Marcus Hook, Pennsylvania.



PAULINE BEERY MACK, F.A.I.C., studied at Missouri State University, Columbia University, and the Pennsylvania State College, obtaining the Ph.D. degree from the latter college. Specializing in textile chemistry and the biochemistry of human nutrition, she is the author of a large number of papers on textile chemistry. She is professor of textile chemistry at The Pennsylvania State College, State College, Penna.



DAN PAUL MANKA, S.A.I.C., obtained the A.B. degree from Valparaiso University, and is still a student at that university. His address is 1120 Lincoln Avenue, Steubenville, Ohio.

MELVIN G. MELLON, F.A.I.C., was graduated from Allegheny College and obtained the Ph.D. degree from Ohio State University. Specializing in general quantitative analysis, with special emphasis on spectrophotometry and in chemical literature, he is the author of two books and about forty-five technical papers. He is professor of analytical chemistry, Purdue University, Lafayette, Ind.



E. J. ROBERTS, F.A.I.C., obtained the Ph.D. degree from Yale University. He specializes in the thermodynamics of solutions; heterogeneous equilibria; Stokes Law hydraulics; and wet processing for phosphoric acid, and is the author of several technical publications. He is research chemist with Dorr Company, Inc., Westport, Conn.



MARY LONDON SAGUE, F.A.I.C., was graduated from Vassar College with the A.B. degree and from Columbia University with the Ph.D. degree. Her preferred chemical subjects are general and physical chemistry, inorganic chemistry, biological chemistry, and the teaching of chemistry. She is chairman of the Department of Chemistry of Vassar College, Poughkeepsie, N. Y.



A. LLOYD TAYLOR, F.A.I.C., holds the B.S. degree from Penn College and the Ph.D. degree from the State University of Iowa. Particularly interested in general and physical chemistry, electrochemistry, organic chemistry, general industrial chemistry, pharmaceutical chemistry, foods, the fermentation industries, fats, fatty oils, waxes and soaps, sugar, starch and gums, he is head of the Department of Chemistry of Pease Laboratories, Inc., New York, N. Y.

WALLACE WINDUS, F.A.I.C., studied at the University of Montana, and at the University of Illinois, from which he received the Ph.D. degree. Specializing in the reduction of nicotine; synthesis and resolution of methionine; leather; feeding with amino acid; and the supplementing effect of casein fractions, he is research chemist in the

Leather Division of Rohm and Haas Chemical Company, Bristol, Penna.



PAUL C. WETTERAU, F.A.I.C., obtained the M.S. degree from Lehigh University. He is the co-author of an article on linseed oils. His position is assistant works chemist at Congoleum-Nairn, Inc., Marcus Hook, Penna.

## NEWS

Dr. Maximilian Toch, President of THE AMERICAN INSTITUTE OF CHEMISTS, on January twenty-seventh conferred at Albany, New York, with Governor Lehman and Dr. Frank Pierrepont Graves, President of the University of the State of New York and State Commissioner of Education. The question under discussion was the licensing of chemists. It was feared that opposition would be presented by the strong political organization of pharmacists, who call themselves "chemists". Dr. Toch stated that it was his personal opinion that a pharmacist with an adequate chemical education would be entitled to call himself a chemist. Arrangements were made to continue the discussion at a luncheon in New York City, sometime in February, when Dr. Graves would meet with the officers of the INSTITUTE.



Mr. Cyril S. Kimball has been elected to succeed Dr. Foster Dee Snell, F.A.I.C., as Honorary Secretary of the American Section of the Society of Chemical Industry. Dr. Snell resigned this position at the Perkin Medal meeting held at The Chemists' Club, New York, N. Y., in January, after serving as Honorary Secretary for over ten years.

Lieutenant William J. McMahon, in command of the Technical Research Laboratory of the Police Department of the City of New York, will address the members of the New York Chapter of THE AMERICAN INSTITUTE OF CHEMISTS on the subject of "The Chemist in Crime Detection." He will be accompanied by Chemist Edward J. Kelley, also of the Technical Research Laboratory.

The meeting will be held on Friday, February 26, 1937, at 7:45 p. m. at The Chemists' Club, 52 East 41st Street, New York, N. Y., preceded by an informal dinner at 6:30 p. m.



First Lieutenant Lonnie Clifton Elmore, F.A.I.C., Chemical Warfare Service, Officers' Reserve Corps, United States Army, of Winston-Salem, North Carolina, has been selected as one of two Chemical Warfare officers from the Fourth Corps Area, to be a student of the Army Line and Staff Course, being held at the Chemical Warfare School, Edgewood Arsenal, Maryland, from February 7, 1937, to May 1, 1937.



Reprinted in:

*Reader's Digest*, February, 1937, a portion of the article, "The Wizard of Tuskegee," by W. Wade Moss, F.A.I.C., which appeared in the October, 1936, issue of THE CHEMIST.

Dr. Frederick Gardener Cottrell, Washington, D. C., who perfected the process by which the cost of helium gas was reduced from \$1,700 to 10 cents a cubic foot, has been chosen to receive the Washington Award for 1937, according to an announcement made recently in Chicago by Edward J. Mehren, chairman of the Washington Award Commission.

The Washington Award is administered by the Western Society of Engineers in cooperation with four other great engineering societies—the American Society of Civil Engineers, the American Institute of Mining and Metallurgical Engineers, the American Society of Mechanical Engineers, and the American Institute of Electrical Engineers. The award is made annually as an honor conferred on a brother engineer by his fellows for accomplishments which pre-eminently promote the happiness, comfort and well-being of humanity. The tangible symbol of the award, a bronze plaque mounted in marble, will be formally presented to Dr. Cottrell at a dinner on February 23rd.



The American Institute of the City of New York announces that a round table meeting will be held February 16, 1937, at eight o'clock, in the Auditorium of the New York Museum of Science and Industry, 30 Rockefeller Plaza, New York, N. Y. The subject for discussion is "Every-day Aspects of Allergies." The Speakers are, Dr. R. P. Wodehouse, Scientific Director, Arlington Chemical Company, presiding; Dr. William S. Thomas, Attending Physician and Director, Allergy Clinic, St. Luke's Hospital, and Dr. Maximilian A. Ramirez, Director of Immunology, French Hospital.

### Institute of Biochemists and Bacteriologists

Announcement of the formation of the Institute of Biochemists and Bacteriologists (I.B.B.), composed of men whose daily duties include the performance of the laboratory work required by physicians in their private practice, should be of general interest to chemists. Chemistry and medicine, which should be natural allies for the general welfare, have frequently appeared in the public eye as acrimonious adversaries. Only recently the American Medical Association officially objected to the presentation of a certain paper before the division of medicinal chemistry of the American Chemical Society, and the public read in the daily press of the officers of the American Chemical Society recanting and promising in the future to submit to the censorship of the American Medical Association. The reaction of most chemists to this situation was unfavorable, as expressed in editorials and articles in several industrial journals.

The new Institute, whose membership is in daily contact with the actual practitioners of medicine, has as its general aim the establishment of confidence and understanding between medical men and the chemists and other scientific workers whose efforts place at their disposal the practical applications of science. Included in its specific aims are the passing of legislation in coöperation with the medical profession for the licensing and control of clinical laboratories; establishment of standard clinical laboratory procedures in collaboration with the committees of the Society of Clinical Pathologists and of the American Public Health Association; promotion of fair working conditions

for clinical laboratory assistants and technicians; and elimination of evils in laboratory practice by the establishment of a code of ethics and a reference board for passing on questions of conduct.

The Institute of Biochemists and Bacteriologists favors the licensing of professional chemists as a measure for the public good and for the protection of the chemist. Whatever may be the demerits of licensing, the process establishes the profession on a legal basis which it now lacks, and automatically serves as a check on those groups which would encroach on the legitimate economic field of the chemist.

The present membership of this new organization includes a number of practicing biochemists and bacteriologists in Philadelphia and vicinity. Men in similar positions in other localities are urged to join, both for their own and the general welfare. Inquiries may be addressed to its President pro tem, John H. Beltz, F.A.I.C., 3340 N. Broad Street, Phila. or to the Secretary pro tem, Harold G. Lederer, 1923 Spruce Street, Philadelphia. Meyer Samson, F.A.I.C., is chairman of the Committee on Public Relations.



The Department of Chemistry of Brooklyn College, Brooklyn, New York, announces that the following staff promotions were effective January 1, 1937:

Dr. Martin Meyer, F.A.I.C., to the rank of Professor.

Dr. Roland M. Whittaker, J.A.I.C., to the rank of Assistant Professor.

Mr. Robert Maurmeyer, J.A.I.C., to the rank of Instructor.

Mr. Jacob G. Sharefkin, J.A.I.C., to the rank of Instructor.

Dr. Donald D. Wright to the rank of Instructor.

Mr. Maurice Ogur to the rank of Tutor.

Mr. Alexander Calandra to the rank of Tutor.

Mr. Stephen P. Marion to the rank of Tutor.



### Nopco Staff Meetings

A series of meetings are held monthly by the staff of the National Oil Products Company. This year's plans include prominent speakers who have been scheduled to talk on a number of interesting subjects.

In December, Mr. Howard S. Neiman, F.A.I.C., well known patent attorney, reviewed the necessary requisites for proper patent protection, emphasizing the importance of keeping accurate and adequate records of an invention. He pointed out a number of pitfalls to avoid and cited concrete examples as proof of his contentions. Most interesting were his illustrative anecdotes, with which he interspersed his talk and which he told in his own inimitable way.

For the January meeting, the group was fortunate in obtaining Dr. Gerald L. Wendt, F.A.I.C., Editor of *Chemical Reviews* and well known research chemist and teacher, as speaker for the evening. Dr. Wendt spoke on what might perhaps be called one of the most fascinating of subjects, "Hunches and Their Sources". His talk was based on the theory that the subconscious mind is the font of our inventive efforts. An absorbing angle of the problem was Dr. Wendt's conception of what constitutes a proper atmosphere or environment of the subconscious mind in order to function and be productive. This atmosphere, so necessary for creative effort,

can best be described as a state of "reverie". The conscious mind, Dr. Wendt explained, then rationalizes and coördinates into practicability what the subconscious originates.

On February first, the second meeting of the year was held. The speaker was William G. Nash, M.D., Newark, N. J., who spoke on the subject of "General Allergies in Humans".



The Society of Chemical Industry, American Section, will hold a meeting on February 19, 1937, at 7:30 P. M. at The Chemists' Club, 52 East 41st Street, New York, N. Y. Mr. James G. Vail, F.A.I.C., will preside over the meeting at which Dr. Wallace P. Cohoe is to be the guest speaker. His paper is entitled "Permanent Sizing with Alkali Soluble Cellulose Ethers." A dinner at 6:00 P. M. will precede the meeting.



H. Bennett, F.A.I.C., has recently published two books, "More for Your Money," a discussion of how to buy and test articles for home, office, and factory use; and "The Cosmetic Formula," a collection of modern formulae for cosmetics and allied products.



Florence E. Wall, F.A.I.C., addressed the Connecticut Valley Section of the American Chemical Society, January ninth, at Hartford, Connecticut, on the subject of "Cosmetics—a Fertile Field for Chemical Research."

"Ignorance of the applications of science to the cosmetic industry," Miss Wall said, "and indifference on the part

of most scientists and educators, have been the chief reasons for the exploitation of this field by both charlatans from within and professional crusaders from without.

"Although once a legitimate part of medical practice, cosmetics and beautifications now belong more logically to chemistry. Active legislation, designed to bring cosmetics under government control, will cause a demand for chemists who understand these mysteries. This field should rank equally with foods and drugs in our university classrooms, laboratories, and clinics, where its problems can be studied under proper educational auspices. Many branches of chemistry contribute to the serious study of cosmetics."

To prove that "research in cosmetics" means more than the confecting of a ravishing lipstick, or a cream or lotion to restore lost youth and beauty, Miss Wall outlined several of the major problems to be solved. "Prompt publication of sound research in reputable technical journals would soon explode the pseudo-scientific nonsense now so prevalent about cosmetics."



### Scientist's Psalm

Almighty Power! Too vast to be  
Compassed by human mind or hand,  
With loving awe we reverence Thee,  
Striving to see and understand.  
Within the atom's ordered maze,  
Earth's lumined book, writ to be read,  
Beyond the star-dust's far flung haze,  
We seek Thy works with joy, not dread.  
Our souls, which by Thy richest grace,  
Have waked to justice, mercy, love,  
Find in humanity Thy face,  
And serving men, serve Thee above.

— Jerome Alexander, F.A.I.C.

## FROM OUR READERS

To the Editor:

Reorganization of the Executive branch of the Federal Government has been widely discussed in the news and editorial columns of the Press and by individuals and groups interested in or potentially affected by proposed legislation.

The subject appeals generally to every American citizen. It has an especial appeal to the chemist in Government service. It should appeal to all chemists in the United States interested in management.

In the event that hearings are held in this connection, an excellent opportunity would be presented for organizations interested in advancing the profession of chemistry to appear in order to present constructive suggestions.

J. N. Taylor, F.A.I.C.

*Editor's Comment:* We shall welcome contributions giving the opinions of our readers on this subject.



Editor, THE CHEMIST:

I was greatly interested in Mr. Edward Thomas' article on "You Can't Keep a Chemical Secret", which appeared in the December issue of THE CHEMIST.

On page 772, Mr. Thomas stated, "You know the kind of detective work done by chemists in the year 1917, when they analyzed the liquid 'gas' in unexploded German gas shells and deduced a method of manufacture by study of the impurities in the liquid. They told the Allies how to increase enormously the production of the poison gas by adopting the efficient and rapid German procedure for making the

gas instead of the inefficient and slow procedure previously devised by other chemists of the Allies."

While I am not at all critical of Mr. Thomas' article, yet I noted that he used the term "liquid 'gas'" which to my mind, leaves a conjecture as to what "liquid 'gas'" he speaks of.

There were two main gases used in the World War, and during the year 1917—chlorpicrin and mustard gas. While there may have been others used, yet these were the most important.

Chlorpicrin (trichloronitro methane,  $\text{Cl}_3\text{CNO}_2$ ), was first prepared by the English chemist Stenhouse in 1848, by the reaction of bleaching powder and picric acid; and it was also prepared by the reaction of chloroform with nitric acid. Chlorpicrin was first used by the Germans against the Italians in the spring of 1917 on the western front.

The British fired 260 tons of chlorpicrin largely in L. P. drums and four-inch Stokes Mortar shells during the month of September, 1917. Forty operations were carried out in chlorpicrin in four-inch Stokes Mortar sixty-pounder shells. Chlorpicrin at that time penetrated German masks when the canisters were filled with old charcoal. During the World War, 2,776 tons of chlorpicrin were produced in America, of which 1,903 tons were shipped in bulk overseas. There were 424,771 seventy-five millimeter shells filled with this agent, of which 300,000 were shipped overseas.

Mustard gas (BB' dichloroethyl sulphide,  $(\text{ClCH}_2\text{CH}_2)_2\text{S}$ ), was first carefully investigated by the German chemist, Victor Meyer, in 1886. It had been prepared and described by the English chemist, Guthrie, in 1860. The Germans introduced mustard gas



into warfare one night in July, 1917, against the British army near Ypres, Belgium. The first large-scale use of mustard gas was by the Germans against the British forces at Nieuport, France, July 21 to 29, 1917. The British casualties were 14,276, of whom 500 died within three weeks after the introduction of mustard gas. During the first ten days of August, 1917, the Germans fired 100,000 mustard gas shells, mostly seventy-seven millimeter and light howitzer, against the French Second Army, and 20,000 casualties resulted.

The first Allied use of mustard gas was at Cambrai on November 20, 1917, when the British captured a large stock of German yellow-cross shells and fired them at the Germans.

No American mustard gas in American artillery shell was fired during the war. Mustard gas in bulk was made and shipped to France and Eng-

land for loading into artillery shell. Seven hundred and eleven tons of mustard gas were produced in America during the World War. 190 tons were shipped overseas in bulk. Our capacity in November, 1917, was 900 tons per month. Of 155,025 seventy-five millimeter shells filled with mustard gas by the United States during the World War, 150,000 were shipped overseas.

While Mr. Jerome Alexander, who discussed Mr. Thomas' article in the January CHEMIST, feels that mustard gas is the gas referred to in the article, to my mind the reference may have been to any one of the two or more gases used by the Germans against the Allies in 1917. I have, therefore, presented this short discussion of the two main gases used—Lonnie Clifton Elmore, F.A.I.C., Lieutenant, O. R. C., U. S. Army.

## CHEMISTS ABROAD

By James N. Taylor, F.A.I.C.

**D**R. JAYME STA. ROSA, Editor of "*Revista de Quimica Industrial*" (Rio de Janeiro), the organ of the Chemical Syndicate of Rio de Janeiro, in a personal communication transmits the following information relative to the profession of chemist in Brazil:

"On July 12, 1934, decree No. 24,693 was signed, disposing on the exercise of the profession of chemist in the Brazilian territory. That was the first big victory of graduate chemists who had for a long time struggled for the moralization of the profession of chemist. *The Syndicato dos*

*Chimicos do Rio de Janeiro*, established a few years ago, have it as their finality to protect chemists who have their diploma, and it is the organization that has endeavored most in order that the aspirations of the real chemists be transformed into reality.

"On February 20, 1935, regulation for the execution of Law No. 24,693 was issued by the Government. The following is treated in that regulation:

"Exercise of the profession of chemist; use of professional booklet, administered by the Department of Labor, Industry and

Commerce; registration of diploma of chemist; definition of the profession of chemist; control of the exercise of the profession; penalties (sanctions for those who fall in professional dishonesty, false witness, inability to keep secrets, falsifications, etc.)."

MR. JOHN ROGERS, O.B.E., a former student of the Royal Technical College, Glasgow, and now a director of Imperial Chemical Industries, gave an address on "Industry and the Chemist" at the celebration of the Jubilee of the Andersonian Chemical Society according to *Chemistry and Industry* (London). In this he incorporated some fatherly advice to those students entering the industry.

Mr. Rogers said that however much we might like it to be otherwise, chemistry was the servant of industry and not its master. Sometimes chemists looked with envy upon the great trade unions and their power and value to their members. He was not opposed to such unions, but suggested that the chemist who goes in for an industrial career is for a long time in a stage of apprenticeship and therefore not quite suited to the methods of trade unionism.

Probably ninety percent of the students of chemistry are actuated by a desire to earn a good living and "get on in the world." Few enter great centers of learning to advance the state of knowledge in pure chemistry. Some do so incidentally, and although they make no great demands except for recognition of their discoveries, they may look with envy sometimes on those who achieve high positions in industry. Discovery is valueless unless used, and those who

see possibilities arising from discoveries and utilize them acquire greater merit measured in terms of £.s.d. One may quarrel with the proportion of reward given for original discoveries, but the world undoubtedly decides to reward those who find application for them in industry. It is for the chemist to see that he does not prejudice his chances by over-advertising the fact that he is a chemist—"Keep your chemistry and use it, but do not parade it." The chemist intending to use his chemistry directly as an analyst or industrialist must keep his chemical knowledge well to the fore, but he still needs tact, commonsense, and those qualities that will enable him to get on with people, before he can be a really good chemist.

DR. J. VARGAS EYRE, President-elect of the British Association of Chemists, in speaking at the Annual Dinner and Meeting held in London, said that as far as the future of the Association was concerned, it might not be an unfair thing to say he had joined the rebels and he felt he might say, "Up the Rebels". If they looked things squarely in the face they must see there was something immediately wanting at the present time which the Association could very well do, and that was in inculcating a better sense of professional attitude of mind among chemists. There was sneaking into the profession—and he saw it particularly in the younger generation—almost a tradesman's attitude of mind. They looked at things from the point of view of how much they were going to have on Saturday night, and if they could not get that out of them

very soon, they would ruin the profession. If they did not get busy in that direction, they would miss the opportunity of putting the profession of chemistry where it should be and where it was destined to be. He felt that a little fighting spirit in an organization of this character would be all to the good. Personally he was a little tired of those who put themselves on pedestals and wrangled as to prestige and position and so on. It all left him a little cold. If the Association was to be of any service at all, it was necessary to be active and if he could be of any assistance to the Association, which was already a live one, he would be only too happy. —*The Oil and Colour Trades Journal*, (London).

IN A report of the nineteenth annual meeting of the British Association of Chemists published by the *Chemical Trade Journal* (London), reference was made to criticism by a speaker of the basis upon which the Association's Unemployment Fund operates. The *Journal* now states that it has been informed by the General Secretary of the Association that this criticism did not come from any official spokesman, but from a comparatively new member who was expressing his own personal opinion. "It is obvious," comments the General Secretary, "that the Fund must be run on proper insurance lines to ensure a low premium to the members, since the object is to maintain the status of the chemist and therefore avoid unemployed members being forced to accept an undercut salary. Fortunately, to-day, the majority of employers recognize that the chemist is worthy of his hire, and good employers do not bargain on the basis of a man's misfortunes."

VISCOUNT LEVERHULME, President of the Society of Chemical Industry, was the principal speaker at the Ramsay Dinner held in Glasgow under the united auspices of the various Chemical Societies in Glasgow and the West of Scotland.

In proposing the toast of "The Profession of Chemistry", Viscount Leverhulme said in part that it was as important for the chemist to know the main trend of industrial development as it was for him to know the most recent developments in chemistry, for only thus could he reasonably hope to enter that section of industry which held out the most promise of an expanding demand for his services. It might be argued that the chemist by reason of his steady stream of new discoveries was automatically creating fresh demands for his services in those industries which would avail themselves of his discoveries, but that in no way invalidated his contention that a new discovery was by itself of no value to a chemist unless he had some idea of the economic conditions which were going to determine its value to industry. — *The Oil and Colour Trades Journal* (London).

UPON the occasion of the first anniversary of the death of Secretary of State Francqui, founder and first president of the *Fondation Universitaire* (Belgium), Madame Francqui and Messrs. Jean, Jacques and Pierre Francqui have asked that institution to accept a gift of a million francs for the purpose of the creation of an assistance fund for student beneficiaries of the study-loan, who, for reasons of health particularly have exceptional claims to immediate help. — *Chimie et Industrie* (Paris).

"'Tis time has come," the Walrus said,  
 "To talk of many things:  
 Of shoes—and ships—and sealing wax—  
 Of cabbages—and kings—"



### Aspirin

THE chemist musing in his sanctuary,  
 Fume-wreathed, flame-served, takes  
 common tarry coal

And boils, torments and twists it  
 till a soul.

New-shaped, new-charactered, takes  
 form, breaks free

And wakes — now aspirin, now  
 'T.N.T.

Atoms were ready there. He picked  
 and stole.

They grouped and linked, obeying  
 his control.

What Thing was waiting? Man, or  
 God, is he?

Don't wait to ponder philosophic  
 terms

When sniffly Micky, sneezing, scatters  
 germs,

But, quick! before the others all  
 begin,

Gargle the beggar, rub him till he  
 squirms,

Send him to bed (he sure to see  
 him in)

And give five grains — or ten — of  
 aspirin.

—Punch.



Wanted—Methods of Analysis.

For the determination of the tin in  
 gelatin, the bromine in theobromine,  
 the ozone in glucosone, and the lime in  
 limonene.

### Germantown (Braintree) Glass Works

"Tuesday last (Sept. 19th) a ship  
 arrived here from Holland, with about  
 300 Germans, Men, Women and Chil-  
 dren, some of whom are going to  
 settle at Germantown (a part of Brain-  
 tree), and the others in the Eastern  
 Parts of this Province . . . among the  
 artificers come over in this ship, there  
 are a number of men skilled in mak-  
 ing of Glass, of various Sorts, and a  
 House proper for carrying on that  
 useful Manufacture, will be erected at  
 Germantown as soon as possible." —  
*Boston Evening Post*, Sept. 25, 1752.

"Notice is hereby given, That for  
 the future none will be admitted to  
 see the new manufactory at German-  
 town (Braintree), unless they pay at  
 least one shilling lawful money; and  
 they are desired not to ask above three  
 or four questions, and not to be of-  
 fended if they have not a satisfactory  
 answer to all or any of them."

"NOTE. — The manufactory has  
 received considerable damage, and been  
 very much retarded by the great  
 Number of People which are con-  
 stantly resorting to the House." —  
*Boston Gazette*, Sept. 4, 1753.

George Francis Dow in *"The Arts  
 and Crafts in New England, 1704-  
 1775."*

### Extra! Scoop!

Due to minute and painstaking researches among pseudo-scientists, who have graciously contributed their findings to Spinty, we are able to announce the supplement to the Periodic table, which will be known as the Comic table, since it contains the Elements of Humor. The following elements are released (don't jump) at this time.

*Hifalu-tin*: Symbol Hi! At. Wt. 409.374; the noblest metal of them all. Occurs in abundance on Broadway, New York, and State Street, Chicago.

*Disterbium*: Symbol Dt. The disturbing element. Amphoteric, numerous isotopes, At. Wts. 0.03 to 8.91. Occurs in acid and caustic remarks at critical points in talks and lectures. Quite useless.

*Razzbarium*: Symbol Rz. Occurs native in Bronx Cheer leaders. At. Wt. 79.001. Mental depressant. No known antidote.

*Symposium*: Symbol Sy, terrific gravity approaching  $91 \times 10^9$ , Habitat, all scientific gatherings. Occurs only in combination, not isolatable.

*Chorine*: Symbol Ch, many varieties of isodopes, colors blonde, brunette and auburn. Related to Disterbium above. Gravity, none.

*Trombonium*: Symbol Tr, habitat night clubs; coeff. of friction 0; characterized by irregular oscillatory vibrations; sometimes goes round and round, and comes out somewhere.

*Gracie O'Dynium*: Symbol Gr, occurs in Ireland, Emeralds, etc. High specific attraction for the opposite sex. Evanescent.

*Dillyrium*: Symbol Di, apparently a

light fume or vapor occasionally invading the cerebral cavity of Homo Sapiens. Hypothetical density (referred to air) 0.001.

*Megalithium*: Symbol Me, a new heavy alkali metal (Try to lift a Dolmen sometime). Lines are indeed spectral.

*Scandalum*: Symbol Tsk, discovered by Walter Winchell; a foul smelling gas, highly penetrating; compounds are all scandalous, no ic series.

—The Chemical Bulletin



### Incident

(Even in the best of laboratories.)  
Listen, my children, and let me tell  
Of a morning's hunt for an evil smell.  
The gentle breeze of a day in Spring  
We thought was the cause of the  
whole darn thing.

With nose a-tilt like a bloodhound's  
we

Attempted to solve the mystery.  
We sniffed everywhere that the odor  
led,

It certainly smelled like something  
dead.

Over the bench and down on the floor,  
Into the hood and then by the door,  
Into the desks our nose was thrust,  
Our lip upraised in deep disgust.

We shut the windows and back it  
came

And once again we started the game.  
Bromine and chloride of lime as well  
Were freely sprinkled to catch the  
smell.

Adsorbent carbon was tried in vain:  
The smell was worse when it came  
again;

And all the while from a sink in the  
bench,

Old glue was the steady cause of the  
stench.

—The Percolator

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